

# BETHANY HYDE

## CONTACT

828-329-9568

bethyh@gmail.com

www.bethanyh.com

101 Mountain Ave. Somerville, NJ

## EDUCATION

### Rutgers University | 2019

Masters of Business and Science - Data Science and Analytics

GPA: 3.86

### The University of North

### Carolina at Charlotte | 2015

Bachelor of Science in Systems Engineering

Bachelor of Arts in French

Minor in Mathematics

GPA: 3.95, Chancellor's List | Levine Scholar

### Université de Limoges, France

French Culture and Language Studies, Spring Semester 2013

DELF B2 - National French Proficiency Exam

## SKILLS

**Statistical analysis** techniques including regression, univariate and multivariate analysis, dimensionality reduction, clustering and decision trees.

**Solution Architecture and Data Engineering** (Python, R, SQL)

**Data Visualization** (Tableau & Qlik), UX Design (Sketch, Balsamiq, Marvel), and Web Development (CSS, HTML)

**Oral and Written Communication** - Demonstrated by peer reviewed publications and presentations

Ability to **translate complex methodological and analytical approaches** to non-technical audiences

## WORK EXPERIENCE

### Senior Data Scientist, Commercial Data Sciences

Johnson & Johnson - Janssen Pharmaceuticals

2021-Present

- Led high performing team of data scientists to deliver actionable insights to influence Patient Support Program strategy and assist patients in starting and staying on therapy.
- Defined and prioritized data science strategy and approach by applying advanced analytical techniques to address critical use cases identified by partnering with marketing and brand teams.
- Led creation of data-driven explainable artificial intelligence (xAI) analytics to dynamically predict patients at-risk of experiencing fulfillment issues allowing reimbursement specialists to target health care clinics with tailored education.
- Designed and delivered machine learning models to support the pulmonary arterial hypertension disease marketing teams to create patient profiles focused on engagement in the Care Companion Program. Provided detailed recommendations for leveraging patient profiles for personalization.
- Led and successfully organized the first ever Data + Art Festival. Engaged and cultivated relationships with external community to disseminate the call for submissions and learn from diverse perspectives. Received submissions from a diverse set of external artists both culturally and geographically. Commissioned an artist to provide a live demonstration and interactive installation.
- Spearheaded the creation of the Data Science for Good core team partnering with Global Community Impact team. Facilitated internal education sessions of community programs focused on the benefit provided from data science skilled employees. Hosted first commercial data science team Social Impact Challenge partnering with Corvus Health, a non-government organization (NGO) increasing education and the number of nurses and healthcare providers in Africa.

### Data Scientist, Commercial Data Sciences

Johnson & Johnson - Janssen Pharmaceuticals

2020-2021

- Designed and optimized trade terms between J&J Japan Vision Care and its diverse customers while ensuring acceptance by the governmental regulators. As current trade terms expired, digital twin simulation models were created by using historical sales data and trade terms at the individual customer level to establish and optimize new trade terms to be implemented for the next 3 years.
- Differentiated Janssen patient end-to-end engagement through a superior patient-focused, fulfillment and adherence experience. Led data discovery and feature engineering of specialty pharmacy data connected to claims data for insight generation supporting development of predictive models for ERLEADA Janssen prostate cancer product.
- Designed and deployed predictive approach earlier in patient journey for intervention for field force call optimization for prostate cancer product.
- Produced patient cohort creation data pipeline for immunology line of therapy application. Analysis and creation conducted in SQL and R on over 120K patient records for product compliance, persistency and switching.
- Developed unsupervised machine learning model to segment consumers purchasing MyAcuvue contact lenses. Made and delivered recommendations to the marketing team for consumer engagement.
- Led Commercial Pharma Data Science and Data Management Intern and Co-op Program. Organized and led forecasting of resources, university recruitment, interview scheduling and calibration. Plan and conducted intern and co-op onboarding while quickly adjusting to completely virtual environment.

### One Young World Delegate

2021

Represented J&J joining young talent from every country and sector, working to accelerate social impact. Delegates from 190+ countries are counselled by influential political, business and humanitarian leaders.

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## PUBLICATIONS & PRESENTATIONS

Author: A claims-based, machine-learning algorithm to identify patients with pulmonary arterial hypertension. **Pulmonary Circulation**. 2023; 13:e12237. DOI: [10.1002/pul2.12237](https://doi.org/10.1002/pul2.12237)

Presenter: Observational studies and clinical trials in pulmonary hypertension. **American Thoracic Society International Conference**. 2022; A3601-A3601 DOI: [10.1164/ajrccm-conference.2022.205.1\\_meetingabstract.s.a3601](https://doi.org/10.1164/ajrccm-conference.2022.205.1_meetingabstract.s.a3601)

Author: Characterization of response clusters identified by unsupervised machine learning: A post hoc analysis of the head-to-head ECLIPSE trial of guselkumab and secukinumab in patients with moderate-to-severe psoriasis. **Journal of the American Academy of Dermatology**. 2021; Volume 85, Issue 3, AB21 DOI: [10.1016/j.jaad.2021.06.108](https://doi.org/10.1016/j.jaad.2021.06.108)

Presenter: Identification of Clinical Response Patterns Through Application of Unsupervised Machine Learning on Clinical Trial Time Series Data, **Bio-IT World Conference and Expo**. 2021.

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## CERTIFICATIONS

**MIT Professional Education Digital Programs**: Tackling the Challenges of Big Data & Internet of Things: Road-map to a Connected World

**ITIL Foundation** - Certificate in IT Service Management

**SAS Programming** for Data Science Fast Track

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## LANGUAGES

English 

French 

## WORK EXPERIENCE

### Data Scientist, EMEA Data Sciences

Janssen Pharmaceuticals - Beerse, Belgium 2020

- Completed an international assignment in Beerse, Belgium supporting EMEA Data Sciences. Developed open source disease area visualization application for pulmonary hypertension to be used by medical researchers for aggregated analytics. Designed unified data collection application to harmonize European clinical data to be transformed to common data framework.
- Deployed unsupervised machine learning model and secondary analysis to create actionable profiles on surgeons for cataract surgical lenses. Augmented data using real world evidence and social determinants of health to create more detailed view of each surgeon profile. Focused targeting for optimization of supply chain based on the findings from the clustering analysis in preparation of new product launch to increase implant sales.
- Designed and developed unsupervised machine learning model on time-series data to identify different Psoriasis Area and Severity Index (PASI) response patterns from patients with moderate-to-severe plaque psoriasis in each treatment arm of a Phase 3 comparator head-to-head trial. In partnership with the EMEA Medical Affairs team, five distinct PASI response patterns, independent of and unbiased by prespecified assumptions, were uncovered and validated with an external advisory board. The results were presented at the European Academy of Dermatology and Venerology Congress in 2020.

### Senior Analyst Data Scientist, Janssen Data Sciences

Johnson & Johnson - Janssen Pharmaceuticals 2017-2020

- Designed and created disease area data discovery visualization application and reporting dashboard across 6 data-sets used for commercial analytics. Partnered with Real World Data & Analytics team to develop dashboard capabilities and increase adoption. Conducted user acceptance testing to refine usability and complete quality and legal review. Utilized by 85 users across 6 organizations. Partnered with the Global Commercial Strategic Organization to design, create, and produce an indication split reporting application to enable reproducible business insights using real world data.
- Created sales forecasting application in rShiny to support the Janssen Neuroscience team.
- Conducted global disease area patient survival analysis by designing machine learning model to conduct cox regression.
- Led and executed a pilot for Janssen Epidemiology team to evaluate and test open software to remove obstacles for technical execution of studies across a network of distributed databases. Reduced observational study data processing time by 4 hours.
- Spearheaded image analysis on infrared images for joint detection in collaboration with Janssen R&D Digital Health Technology.

### Solution Architect, Enterprise Architecture

Johnson & Johnson - Janssen Pharmaceuticals 2015-2017

- Implemented Real World Evidence (RWE) Central Portal across the global data science ecosystem and defined the data catalog for search across RWE data sources. This provided Janssen deeper insights into user behavior and utilization of RWE data sources and is a foundation that can be scaled and extended beyond the current 56 global sources as the RWE ecosystem grows.
- Led strategy development and deployment for the first internal suicide alerting solution to support remote clinical trial patients.
- Solution Architect for a 2-year observational clinical trial of 208 subjects. Liaised between Business Partners and development team to develop, capture and manage business requirements.
- Executed compliance analysis documentation for GxP, Sox, privacy and security requirements for clinical trial data.